Release notes for ENDF/B Development n-054_Xe_136 evaluation

April 26, 2017

- **checkr** Warnings:

    1. A previous error halted parsing of the current section
       MAT=5461, MF= 1, MT=451 (1): Parsing stopped

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 1, MT=451
        SECTION CANNOT BE CHECKED FROM SEQUENCE NUMBER     126 TO     184
    ```

- **checkr** Errors:

    1. A variable is outside the allowed ENDF range
       MAT=5461, MF= 1, MT=451 (0): Variable range

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 1, MT=451
        MOD =     1 OUT OF RANGE     0 -     0          RECORD NUMBER     126
    ```

    2. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 2, MT=151 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 2, MT=151
        SECTION  2/151 NOT IN DIRECTORY               RECORD NUMBER     186
    ```

    3. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 3, MT= 1 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 3, MT=  1
        SECTION  3/  1 NOT IN DIRECTORY               RECORD NUMBER     231
    ```

    4. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 3, MT= 2 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 3, MT=  2
        SECTION  3/  2 NOT IN DIRECTORY               RECORD NUMBER     259
    ```

    5. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 3, MT= 4 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 3, MT=  4
        SECTION  3/  4 NOT IN DIRECTORY               RECORD NUMBER     287
    ```

    6. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 3, MT= 16 (0): Directory (b)

    ```
    ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 16
        SECTION  3/ 16 NOT IN DIRECTORY               RECORD NUMBER     312
    ```

    7. Missing a section in directory so your directory is messed up. This error will break everything else
       MAT=5461, MF= 3, MT= 17 (0): Directory (b)

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```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 17
        SECTION  3/ 17 NOT IN DIRECTORY                RECORD NUMBER    327
```

8. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5461, MF= 3, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 22
        SECTION  3/ 22 NOT IN DIRECTORY                RECORD NUMBER    335
```

9. Missing a section in directory so your directory is messed up. This error will break everything else
   MAT=5461, MF= 3, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 28
        SECTION  3/ 28 NOT IN DIRECTORY                RECORD NUMBER    345
```

10. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 51 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 51
        SECTION  3/ 51 NOT IN DIRECTORY                RECORD NUMBER    355
```

11. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 52 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 52
        SECTION  3/ 52 NOT IN DIRECTORY                RECORD NUMBER    380
```

12. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 53 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 53
        SECTION  3/ 53 NOT IN DIRECTORY                RECORD NUMBER    404
```

13. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 54 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 54
        SECTION  3/ 54 NOT IN DIRECTORY                RECORD NUMBER    428
```

14. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 55 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 55
        SECTION  3/ 55 NOT IN DIRECTORY                RECORD NUMBER    452
```

15. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 56 (0): Directory (b)

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 56
          SECTION  3/ 56 NOT IN DIRECTORY                RECORD NUMBER     475
```

16. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 57\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 57
          SECTION  3/ 57 NOT IN DIRECTORY                RECORD NUMBER     498
```

17. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 58\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 58
          SECTION  3/ 58 NOT IN DIRECTORY                RECORD NUMBER     521
```

18. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 59\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 59
          SECTION  3/ 59 NOT IN DIRECTORY                RECORD NUMBER     543
```

19. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 60\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 60
          SECTION  3/ 60 NOT IN DIRECTORY                RECORD NUMBER     565
```

20. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 61\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 61
          SECTION  3/ 61 NOT IN DIRECTORY                RECORD NUMBER     587
```

21. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 62\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 62
          SECTION  3/ 62 NOT IN DIRECTORY                RECORD NUMBER     608
```

22. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 63\ (0){:}\ Directory\ (b)$

```
       ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 63
          SECTION  3/ 63 NOT IN DIRECTORY                RECORD NUMBER     629
```

23. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT{=}5461,\ MF{=}\ 3,\ MT{=}\ 64\ (0){:}\ Directory\ (b)$

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 64
          SECTION  3/ 64 NOT IN DIRECTORY                RECORD NUMBER     650
```

24. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 65 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 65
          SECTION  3/ 65 NOT IN DIRECTORY                RECORD NUMBER     670
```

25. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 66 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 66
          SECTION  3/ 66 NOT IN DIRECTORY                RECORD NUMBER     690
```

26. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT= 91 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT= 91
          SECTION  3/ 91 NOT IN DIRECTORY                RECORD NUMBER     710
```

27. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT=102 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT=102
          SECTION  3/102 NOT IN DIRECTORY                RECORD NUMBER     730
```

28. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT=103 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT=103
          SECTION  3/103 NOT IN DIRECTORY                RECORD NUMBER     758
```

29. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT=104 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT=104
          SECTION  3/104 NOT IN DIRECTORY                RECORD NUMBER     772
```

30. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT=105 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT=105
          SECTION  3/105 NOT IN DIRECTORY                RECORD NUMBER     783
```

31. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 3, MT=107 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 3, MT=107
            SECTION  3/107 NOT IN DIRECTORY                    RECORD NUMBER     793
```

32. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 2 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT=  2
            SECTION  4/  2 NOT IN DIRECTORY                    RECORD NUMBER     810
```

33. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 16 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 16
            SECTION  4/ 16 NOT IN DIRECTORY                    RECORD NUMBER    1145
```

34. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 17 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 17
            SECTION  4/ 17 NOT IN DIRECTORY                    RECORD NUMBER    1192
```

35. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 22 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 22
            SECTION  4/ 22 NOT IN DIRECTORY                    RECORD NUMBER    1217
```

36. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 28 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 28
            SECTION  4/ 28 NOT IN DIRECTORY                    RECORD NUMBER    1248
```

37. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 51 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 51
            SECTION  4/ 51 NOT IN DIRECTORY                    RECORD NUMBER    1281
```

38. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 52 (0): Directory (b)

```
        ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 52
            SECTION  4/ 52 NOT IN DIRECTORY                    RECORD NUMBER    1500
```

39. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 53 (0): Directory (b)

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```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 53
         SECTION  4/ 53 NOT IN DIRECTORY                RECORD NUMBER    1589
```

40. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 54$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 54
         SECTION  4/ 54 NOT IN DIRECTORY                RECORD NUMBER    1676
```

41. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 55$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 55
         SECTION  4/ 55 NOT IN DIRECTORY                RECORD NUMBER    1878
```

42. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 56$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 56
         SECTION  4/ 56 NOT IN DIRECTORY                RECORD NUMBER    1961
```

43. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 57$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 57
         SECTION  4/ 57 NOT IN DIRECTORY                RECORD NUMBER    2153
```

44. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 58$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 58
         SECTION  4/ 58 NOT IN DIRECTORY                RECORD NUMBER    2335
```

45. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 59$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 59
         SECTION  4/ 59 NOT IN DIRECTORY                RECORD NUMBER    2412
```

46. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 60$ (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 60
         SECTION  4/ 60 NOT IN DIRECTORY                RECORD NUMBER    2487
```

47. Missing a section in directory so your directory is messed up. This error will break everything else
    $MAT=5461, MF= 4, MT= 61$ (0): Directory (b)

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```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 61
         SECTION  4/ 61 NOT IN DIRECTORY                RECORD NUMBER    2560
```

48. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 62 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 62
         SECTION  4/ 62 NOT IN DIRECTORY                RECORD NUMBER    2631
```

49. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 63 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 63
         SECTION  4/ 63 NOT IN DIRECTORY                RECORD NUMBER    2700
```

50. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 64 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 64
         SECTION  4/ 64 NOT IN DIRECTORY                RECORD NUMBER    2767
```

51. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 65 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 65
         SECTION  4/ 65 NOT IN DIRECTORY                RECORD NUMBER    2832
```

52. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 66 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 66
         SECTION  4/ 66 NOT IN DIRECTORY                RECORD NUMBER    2895
```

53. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 4, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 4, MT= 91
         SECTION  4/ 91 NOT IN DIRECTORY                RECORD NUMBER    2956
```

54. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 5, MT= 16 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 5, MT= 16
         SECTION  5/ 16 NOT IN DIRECTORY                RECORD NUMBER    3018
```

55. Missing a section in directory so your directory is messed up. This error will break everything else
    MAT=5461, MF= 5, MT= 17 (0): Directory (b)

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```
      ERROR(S) FOUND IN MAT=5461, MF= 5, MT= 17
         SECTION  5/ 17 NOT IN DIRECTORY                RECORD NUMBER    3228
```

56. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5461, MF= 5, MT= 22 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 5, MT= 22
         SECTION  5/ 22 NOT IN DIRECTORY                RECORD NUMBER    3328
```

57. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5461, MF= 5, MT= 28 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 5, MT= 28
         SECTION  5/ 28 NOT IN DIRECTORY                RECORD NUMBER    3451
```

58. Missing a section in directory so your directory is messed up. This error will break everything else
MAT=5461, MF= 5, MT= 91 (0): Directory (b)

```
      ERROR(S) FOUND IN MAT=5461, MF= 5, MT= 91
         SECTION  5/ 91 NOT IN DIRECTORY                RECORD NUMBER    3584
```

- `psyche` Warnings:

1. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 136. L = 0 / STRENGTH FUNCTION IS 2.84087E-02 / AVERAGE GAMMA WIDTH 3.00000E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
    SECTION 151
        ISOTOPE MASS = 136. L =  0
                    STRENGTH FUNCTION IS  2.84087E-02
                              AVERAGE GAMMA WIDTH 3.00000E-02
... [1 more lines]
```

2. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 136. L = 0 / STRENGTH FUNCTION 2.84087E-02 / LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04 (0): URR str. ftn.

```
FILE  2
    SECTION 151
        ISOTOPE MASS = 136. L =  0
                      STRENGTH FUNCTION 2.84087E-02
                                   LIES OUTSIDE LIMITS 1.00000E-05 TO 1.00000E-04
```

3. Strength function in URR not in agreement with PSYCHE's expectations
FILE 2 / SECTION 151 / ISOTOPE MASS = 136. L = 1 / STRENGTH FUNCTION IS 8.81166E-05 / AVERAGE GAMMA WIDTH 3.02286E-02 / LIES OUTSIDE LIMITS 4.00000E-02 TO 9.00000E+00 EV. (0): URR str. ftn.

```
FILE  2
   SECTION 151
      ISOTOPE MASS = 136. L =  1
                 STRENGTH FUNCTION IS  8.81166E-05
                              AVERAGE GAMMA WIDTH 3.02286E-02
... [1 more lines]
```

4. Strength function in URR not in agreement with PSYCHE's expectations
   FILE 2 / SECTION 151 / ISOTOPE MASS = 136. L = 1 / STRENGTH FUNCTION
   8.81166E-05 / LIES OUTSIDE LIMITS 1.00000E-04 TO 8.00000E-04 (0): URR str.
   ftn.

```
FILE  2
   SECTION 151
      ISOTOPE MASS = 136. L =  1
                 STRENGTH FUNCTION 8.81166E-05
                              LIES OUTSIDE LIMITS 1.00000E-04 TO 8.00000E-04
```

- `fudge-4.0` Warnings:

   1. Missing a channel with a particular angular momenta combination
      resonances / resolved / MultiLevel_BreitWigner (Error # 0): missingResonanceChannel

```
WARNING: Missing a channel with angular momenta combination L = 0, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 0.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 1.5 and S = 1.5 for "capture"
WARNING: Missing a channel with angular momenta combination L = 1, J = 2.5 and S = 1.5 for "capture"
```

   2. Potential scattering hasn't converged, you need more L's!
      resonances / resolved (Error # 1): potentialScatteringNotConverged

```
WARNING: Potential scattering hasn't converged by L=1 at E=490000.0 eV, xs[1]/xs[0]=5.59614693353% > 0.1%
```

- `fudge-4.0` Errors:

   1. Found a negative probability
      reaction label 1: n + Xe136_e1 / Product: n / Distribution: / angularTwoBody - XYs2d:
      (Error # 0): Negative prob.

```
WARNING: Negative probabilities encountered. Incident energy: 1.9e7 eV, worst case: -0.00600451160994
WARNING: Negative probabilities encountered. Incident energy: 1.95e7 eV, worst case: -0.0551242975569
WARNING: Negative probabilities encountered. Incident energy: 2.e7 eV, worst case: -0.105035213686
```

   2. Found a negative probability
      reaction label 4: n + Xe136_e4 / Product: n / Distribution: / angularTwoBody - XYs2d:
      (Error # 0): Negative prob.

```
WARNING: Negative probabilities encountered. Incident energy: 1.85e7 eV, worst case: -0.0173273169895
WARNING: Negative probabilities encountered. Incident energy: 1.9e7 eV, worst case: -0.0495864799159
WARNING: Negative probabilities encountered. Incident energy: 1.95e7 eV, worst case: -0.0819720095745
WARNING: Negative probabilities encountered. Incident energy: 2.e7 eV, worst case: -0.114442660287
```

   3. Found a negative probability
      reaction label 6: n + Xe136_e6 / Product: n / Distribution: / angularTwoBody - XYs2d:
      (Error # 0): Negative prob.

```
WARNING: Negative probabilities encountered. Incident energy: 1.95e7 eV, worst case: -0.0333841571454
WARNING: Negative probabilities encountered. Incident energy: 2.e7 eV, worst case: -0.083707774402
```

4. Found a negative probability
   reaction label 7: n + Xe136_e7 / Product: n / Distribution: / angularTwoBody - XYs2d: (Error # 0): Negative prob.

```
WARNING: Negative probabilities encountered. Incident energy: 1.95e7 eV, worst case: -0.0291621322141
WARNING: Negative probabilities encountered. Incident energy: 2.e7 eV, worst case: -0.079373627529
```

5. Calculated and tabulated Q values disagree.
   reaction label 18: n[multiplicity:'2'] + Xe135 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -7807470.056884766 eV vs -7.9948e6 eV!
```

6. Calculated and tabulated Q values disagree.
   reaction label 19: n[multiplicity:'3'] + Xe134 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -14171330.02191162 eV vs -1.4447e7 eV!
```

7. Calculated and tabulated Q values disagree.
   reaction label 20: n + H1 + I135 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -9652519.745880127 eV vs -9.897e6 eV!
```

8. Calculated and tabulated Q values disagree.
   reaction label 21: Xe137 + gamma (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 4297482.761154175 eV vs 4.0248e6 eV!
```

9. Calculated and tabulated Q values disagree.
   reaction label 22: n + He4 + Te132 (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -3395917.426742554 eV vs -3.6321e6 eV!
```

10. Calculated and tabulated Q values disagree.
    reaction label 23: H1 + I136_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -18064944.6656189 eV vs -6.0967e6 eV!
```

11. Calculated and tabulated Q values disagree.
    reaction label 24: H2 + I135_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -22772953.64494324 eV vs -7.6725e6 eV!
```

12. Calculated and tabulated Q values disagree.
    reaction label 25: H3 + I134_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: -27594984.37745667 eV vs -9.3179e6 eV!
```

13. Calculated and tabulated Q values disagree.
    reaction label 26: He4 + Te133_s (Error # 0): Q mismatch

```
WARNING: Calculated and tabulated Q-values disagree: 2437815.303710938 eV vs 2.1868e6 eV!
```

- `njoy2012` Warnings:

1. Evaluation has no unresolved resonance parameters given
   unresr...calculation of unresolved resonance cross sections (0): No URR

   ```
   ---message from unresr---mat 5461 has no unresolved parameters
                      copy as is to nout
   ```

2. Evaluation has no unresolved resonance parameters given
   purr...probabalistic unresolved calculation (0): No URR

   ```
   ---message from purr---mat 5461 has no unresolved parameters
                     copy as is to nout
   ```

3. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (0): GROUPR/conver (0)

   ```
   ---message from conver---cannot do complete particle production for mt= 16
                        only mf4/mf5 provided
   ```

4. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (1): GROUPR/conver (0)

   ```
   ---message from conver---cannot do complete particle production for mt= 17
                        only mf4/mf5 provided
   ```

5. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (2): GROUPR/conver (0)

   ```
   ---message from conver---cannot do complete particle production for mt= 22
                        only mf4/mf5 provided
   ```

6. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (3): GROUPR/conver (0)

   ```
   ---message from conver---cannot do complete particle production for mt= 28
                        only mf4/mf5 provided
   ```

7. With the advent of the ENDF-6 format, it is possible to make evaluations that fully describe all the products of a nuclear reaction. Some carry-over evaluations from earlier ENDF/B versions also have this capability, but many do not. This message is intended to goad evaluators to improve things!
   groupr...compute self-shielded group-averaged cross-sections (4): GROUPR/conver (0)

   ```
   ---message from conver---cannot do complete particle production for mt= 91
                        only mf4/mf5 provided
   ```

- `njoy2012` Errors:

  1. An angular distribution is negative
     acer...monte carlo neutron and photon data (0): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                       22 for mt= 51 e= 1.900E+07
     ```

  2. An angular distribution is negative
     acer...monte carlo neutron and photon data (1): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      144 for mt= 51 e= 1.950E+07
     ```

  3. An angular distribution is negative
     acer...monte carlo neutron and photon data (2): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      223 for mt= 51 e= 2.000E+07
     ```

  4. An angular distribution is negative
     acer...monte carlo neutron and photon data (3): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                       89 for mt= 54 e= 1.850E+07
     ```

  5. An angular distribution is negative
     acer...monte carlo neutron and photon data (4): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      134 for mt= 54 e= 1.900E+07
     ```

  6. An angular distribution is negative
     acer...monte carlo neutron and photon data (5): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      114 for mt= 54 e= 1.950E+07
     ```

  7. An angular distribution is negative
     acer...monte carlo neutron and photon data (6): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      110 for mt= 54 e= 2.000E+07
     ```

  8. An angular distribution is negative
     acer...monte carlo neutron and photon data (7): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      131 for mt= 56 e= 1.950E+07
     ```

  9. An angular distribution is negative
     acer...monte carlo neutron and photon data (8): Neg. P(Ejμ) (b)

     ```
     ---message from ptleg2---negative probs found
                      184 for mt= 56 e= 2.000E+07
     ```

10. An angular distribution is negative
    acer...monte carlo neutron and photon data (9): Neg. P(Ejμ) (b)

    ```
     ---message from ptleg2---negative probs found
                       125 for mt= 57 e= 1.950E+07
    ```

11. An angular distribution is negative
    acer...monte carlo neutron and photon data (10): Neg. P(Ejμ) (b)

    ```
     ---message from ptleg2---negative probs found
                       182 for mt= 57 e= 2.000E+07
    ```